The McGraw-Hill Companies

8787 Orion Place
Columbus, OH 43240

February 16, 2011

Mr. Jeff Zaring
State Board of Education Administrator
Indiana Department of Education
Room 225 State House
Indianapolis, IN 46204

Dear Mr. Zaring,

McGraw-Hill Education is pleased to have the opportunity to provide comments on the Textbook Advisory Committee reviews, as well as detailed justifications as to why the Indiana State Board of Education should adopt Macmillan/McGraw-Hill *Math Connects* grades 3-5, *Glencoe Algebra 1* and *Glencoe Geometry*.

We fully support Indiana's goal of providing engaging, effective programs that capture the vision of the Common Core State Standards, including the Standards for Mathematical Practice. Our authors, editors, and educational consultants have carefully studied these standards, and we have attempted to address them in our Indiana submissions.

These high-quality programs deliver classroom-tested best practices that ensure students will understand mathematics and demonstrate appropriate mastery. Our curriculum is reflective of cross-disciplinary skills such as critical thinking and problem solving. The responses for each course offer examples of how each program addresses most significant reviewer concerns, as well as the feedback from the Charles A. Dana Center.

We respectfully request that the Indiana State Board of Education reconsider the non-recommended status of Macmillan/McGraw-Hill *Math Connects* grades 3-5, *Glencoe Algebra 1* and *Glencoe Geometry*. Please feel free to contact me if you have any questions or concerns.

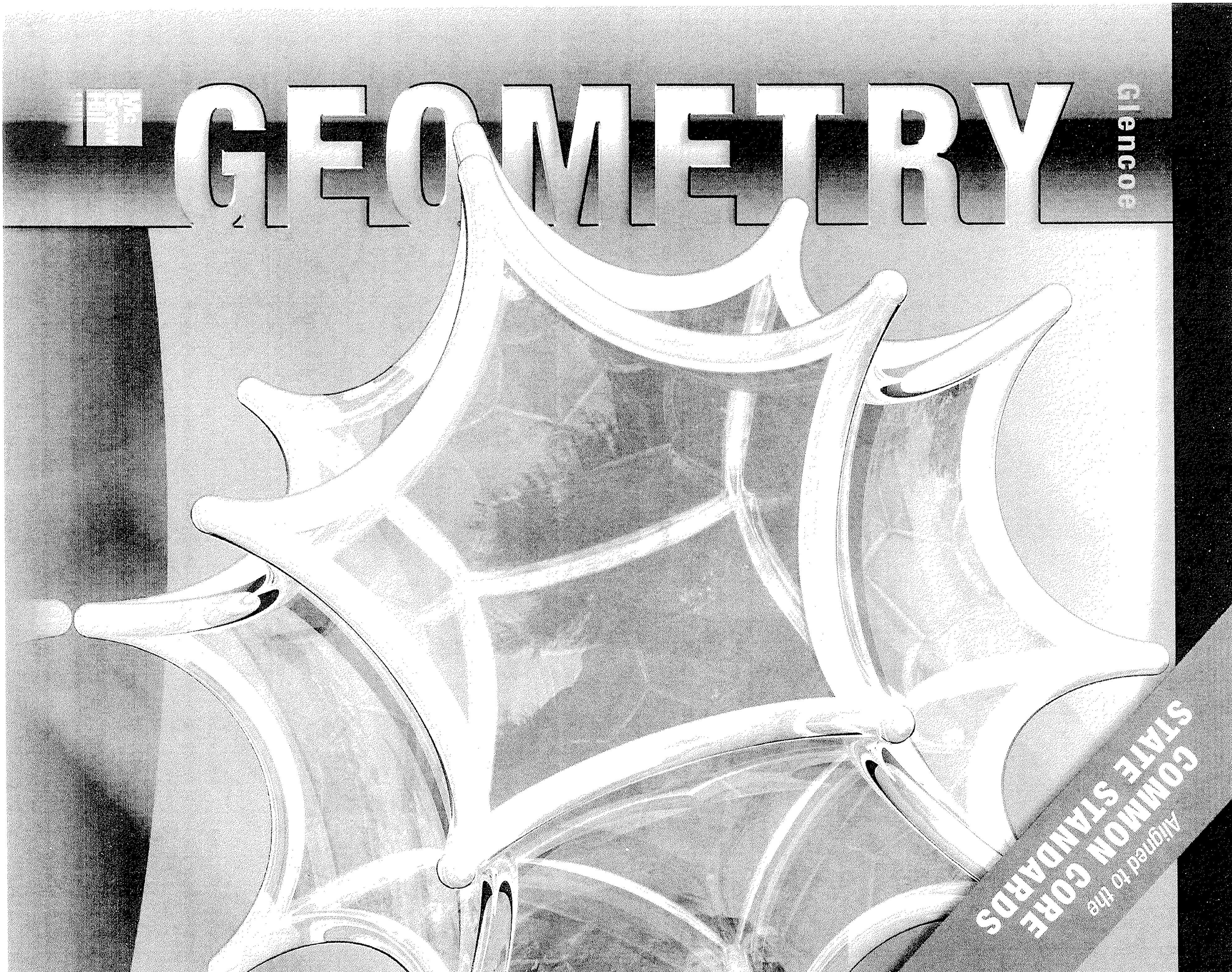
Sincerely,

Lisa Carmona

Lisa Carmona
Vice President, PreK-12 Mathematics Editorial
McGraw-Hill School Education Group

GEOMETRY

Glencoe



Aligned to the COMMON CORE STATE STANDARDS

Publisher Response to Textbook Review
Indiana's Education Roundtable, 2010

PUBLISHER	School Education Group a division of The McGraw-Hill Companies Inc.				
CONTACT	Jeff Whorley	**PHONE**	404-441-6444	**E-MAIL**	Jeff_Whorley@mcgraw-hill.com
TITLE	*Glencoe Geometry*				
AUTHOR(S)	Carter, Cuevas, Day, and Malloy				
EDITION	1st				
COPYRIGHT	2012				
ISBN	978-0-07-895271-5				

IDENTIFICATION AND JUSTIFICATION

STANDARD FOR MATHEMATICAL PRACTICE	**2.** Make sense of problems and persevere in solving them.
RATING	2
OUR RESPONSE	In *Glencoe Geometry*, students are reminded of the four-step problem solving plan. With this plan, students read and analyze the meaning of a problem, plan a method for solution, carry out their plan, and then check the solution. Checking a solution includes asking yourself if the solution makes sense and if it fits the information in the problem. As in *Glencoe Algebra 1,* students are expected to apply this strategy to each problem throughout the course. In each chapter, this method is demonstrated for students, most often in the context of a real-world problem. Some examples: Lesson 3-3, page 190, Example 2; Lesson 5-6, page 373, Example 2, and Lesson 8-3, page 561, Example 4. Teachers serve a critical role in modeling sense making and perseverance in solving problems. Support for teachers in this role is offered in the Teacher Edition of *Glencoe Geometry*. Some examples: Lesson 1-4, page 26, Tips for New Teachers; Lesson 2-7, page 146, Tips for New Teachers; Lesson 4-8, page 305, Tips for New Teachers; Lesson 6-1, page 395, Tips for New Teachers.
STANDARD FOR MATHEMATICAL PRACTICE	**7.** Look for and make use of structure.
RATING	2

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OUR RESPONSE	In *Glencoe Geometry* students routinely explore first, through multiple representations, the geometric and mathematical patterns that lead to many postulates, theorems, formulas, and other conjectures. Some examples: Lesson 3-4, page 204, Exercise 54; Lesson 3-5, page 213, Exercise 36; Lesson 4-1, page 243, Exercise 55; Lesson 5-3, page 350, Exercise 42; Lesson 5-6, page 379, Exercise 37; Lesson 6-4, page 428, Exercise 44. In addition to the explorations afforded students in the exercises sets, students also look for patterns and structure in geometry software, graphing technology, and hands-on labs. Some examples: Extend 1-6, pages 65-66; Explore 4-7, pages 294-295; Explore 5-1, page 323; Explore 5-5, page 363; Explore 6-3, page 412.
COMMON CORE STATE STANDARD	**G-CO.8** Explain how the criteria for triangle congruence (ASA, SAS, and SSS) follow from the definition of congruence in terms of rigid motions.
RATING	2
OUR RESPONSE	Students explore the criteria for triangle congruence using the definition of congruence in terms of rigid motions in Extend 9-6 using tracing paper. They then use their explorations to explain how ASA, SAS, and SSS follow from the principle of superposition, which states that two figures are congruent if and only if there is a rigid motion or a series of rigid motions that maps one figure exactly onto the other.
COMMON CORE STATE STANDARD	**G-CO.13** Construct an equilateral triangle, a square, and a regular hexagon inscribed in a circle.
RATING	1
OUR RESPONSE	Students construct a regular hexagon inscribed in a circle and an equilateral triangle inscribed in a circle in Exercise 2 on page 740. Students construct a square inscribed in a circle in Exercise 3 on page 740.
COMMON CORE STATE STANDARD	**G-SRT.1a** A dilation takes a line not passing through the center of the dilation to a parallel line, and leaves a line passing through the center unchanged.
RATING	2
OUR RESPONSE	In Explore 9-6 on page 672–673, students investigate this property of dilations and should arrive at this conclusion in Exercise 6 on the bottom of page 672.
COMMON CORE STATE STANDARD	**G-SRT.3** Use the properties of similarity transformations to establish the AA criterion for two triangles to be similar.
RATING	2
OUR RESPONSE	Students explore the AA criterion for triangle similarity using the properties of similarity transformations in Extend 9-6 using tracing paper. They then use their exploration to establish the AA criterion for two triangles to be similar.
COMMON CORE STATE STANDARD	**G-SRT.7** Explain and use the relationship between the sine and cosine of complementary angles.
RATING	1

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OUR RESPONSE	In addition to the opportunity to observe this relationship in Example 1 on page 569 and in Exercises 1–6 and 16–21 on page 573, students are asked to explain and use the relationship between the sine and cosine of complementary angles in Exercise 64 on page 576.
COMMON CORE STATE STANDARD	**G-SRT.9** Derive the formula A = 1/2 ab sin(C) for the area of a triangle by drawing an auxiliary line from a vertex perpendicular to the opposite side.
RATING	1
OUR RESPONSE	Students derive the formula A = 1/2ab sin (C) for the area of a triangle in Exercise 53 on page 596. Students are also given the opportunity to use the formula to find the area of a triangle.
COMMON CORE STATE STANDARD	**G-C.1** Prove that all circles are similar.
RATING	1
OUR RESPONSE	Students are presented with the statement that all circles are similar on page 698 in the Key Concept box on Circle Pairs. Students must prove that this statement is true in Exercise 53 on page 704.
COMMON CORE STATE STANDARD	**G-C.5** Derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius, and define the radian measure of the angle as the constant of proportionality; derive the formula for the area of a sector.
RATING	2
OUR RESPONSE	Students derive using similarity the fact that the length of the arc intercepted by an angle is proportional to the radius in Exercise 54 on page 713. In this same problem, they define the radian measure of the angle as the constant of proportionality and use this definition to convert an angle measure from degree to radian measure.
COMMON CORE STATE STANDARD	**G-GPE.1** Derive the equation of a circle of given center and radius using the Pythagorean Theorem; complete the square to find the center and radius of a circle given by an equation.
RATING	2
OUR RESPONSE	The equation of a circle of given center (h, k) and radius r is developed using the Pythagorean Theorem and Distance Formula at the top of page 757. In Example 3 on page 758, students are shown how to complete the square to find the center and radius of the circle given the equation $x^2 + y^2 - 8x + 2y = -8$. Students are given an opportunity to practice this skill in Exercise 7 on page 760 and in Exercises 24–26 on page 761.
COMMON CORE STATE STANDARD	**G-GPE.6** Find the point on a directed line segment between two given points that partitions the segment in a given ratio.
RATING	1
OUR RESPONSE	Students find the point on a directed line segment between two given points that partitions the segment in a given ratio in Exercise 48 on page 607 and in Exercises 48 and 49 on page 762.
COMMON CORE STATE STANDARD	**G-MG.2** Apply concepts of density based on area and volume in modeling situations (e.g., persons per square mile, BTUs per cubic foot).

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RATING	2
OUR RESPONSE	Students apply concepts of density based on area in Extend 11-2 on page 797, Exercise #14 on page 812, and in Exercise #25 on page 813. Students apply concepts of density based on volume in Exercise #27 on page 868 and Exercise #29 on page 877.
COMMON CORE STATE STANDARD	**S-CP.3** Understand the conditional probability of A given B as $P(A \text{ and } B)/P(B)$, and interpret independence of A and B as saying that the conditional probability of A given B is the same as the probability of A, and the conditional probability of B given A is the same as the probability of B.
RATING	2
OUR RESPONSE	Conditional probability is defined in Lesson 13-5. In Extend 13-5 on page 955, students interpret the independence of two events using a contingency table.
COMMON CORE STATE STANDARD	**S-CP.5** Recognize and explain the concepts of conditional probability and independence in everyday language and everyday situations.
RATING	2
OUR RESPONSE	In addition to the application problem in Lesson 13-5, students explore the concepts of conditional probability and independence in everyday language and in everyday situations in Extend 13-5 on page 955.
COMMON CORE STATE STANDARD	**S.MD.6** Use probabilities to make fair decisions (e.g., drawing by lots, using a random number generator).
RATING	1
OUR RESPONSE	Students use probabilities to make fair decisions in Exercises 23 and 24 on page P9.
COMMON CORE STATE STANDARD	**S.MD.7** Analyze decisions and strategies using probability concepts (e.g., product testing, medical testing, pulling a hockey goalie at the end of a game).
RATING	1
OUR RESPONSE	Students analyze decisions and strategies using probability concepts in Exercise 34 on page 936, in Exercise 16 on page 944, in Exercise 22 on page 945, and in Exercise 23 on page 952.